

ACCESSION NR: AP4043396

the authors use a variant of perturbation theory for the near lying levels to show that the secular equation breaks up into a series of independent equations, signifying that only identical terms actually interact. A final expression is then derived for the ion energy in the crystalline field, in terms of Clebsch-Gordan coefficients, $6j$ -coefficients, and fractional parentage coefficients. The spectrum of an ion with configuration $3d^2$ in a field of cubic symmetry is calculated as an example. Applications to other cases will be considered in a separate article. Orig. art. has: 9 formulas.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet im. A. M. Gor'kogo, Sverdlovsk (Ural State University)

SUBMITTED: 25Mar64

ENCL: 00

SUB CODE: SS

NR REF SOV: 007

OTHER: 010

Card 2/2

L 18856-65 EWT(1)/EWP(e)/EWT(m)/EEC(t)
IJP(c)/APGC(b)/ESI(gs) WH

Feb SSD(c)/RAEM(a)/ASD(m)-3/ESD(t)/

ACCESSION NR: AP4043377

S/0181/64/006/008/2495/2501

AUTHOR : Druzhinin, V. V.; Cherepanov, V. I.

TITLE: On the theory of the "pseudo-Stark" splitting of R-lines in
the spectrum of ruby ²¹ ₁₅ ^B

SOURCE: Fizika tverdogo tela, v. 6, no. 8, 1964, 2495-2501

TOPIC TAGS: Stark splitting, ruby optic material, corundum,
chromium, doublet splitting

ABSTRACT: The effect of an electric field on the R-lines (at
14,421 and 14,450 cm^{-1}) in the red fluorescence of Cr^{3+} ions in
corundum is considered. Without specifying the approximation in the
crystal field method, it is shown that the nature of the Stark ef-
fect depends on the direction of the external electric field. A
field oriented along the optical axis of corundum gives rise to a
linear "pseudo-Stark" splitting of the components of the two doublets.

Card 1/2

L 18856-65
ACCESSION NR: AP4043377

R_1 and R_2 due to nonequivalence of the two positions of chromium ions in corundum. A field oriented at right angles to the optical axis should increase (by $\Delta\nu$) the separation of the "centers of gravity" of the doublets R_1 and R_2 . For fields of 10^5 v/cm the present theory predicts a splitting of ≈ 1 cm $^{-1}$, in good agreement with the published experimental data. The calculated value of $\Delta\nu$ is 10^{-1} -- 10^{-2} cm $^{-1}$ and the smallness of this value explains why it has not yet been observed experimentally. Orig. art. has: 1 figure, 19 formulas and 1 table.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet im. A. M. Gor'kogo, Sverdlovsk (Ural State University)

SUBMITTED: 22Jan64

SUB CODE: OP

NR REF SOV: 003

ENCL: 00

OTHER: 009

Card 2/2

L 20277-65 EWT(1)/EPF(c)/EPA(w)-2/EEC(t)/T/EWA(m)-2 Pr-4/Pab-10 IJP(c)/SSD(c)/
ASD(a)-5/ASD(m)-3/AFMD(t)/ESD(t) WW

ACCESSION NR: AP4041690

S/0181/64/006/007/1939/1945

AUTHOR: Cherepanov, V. I.; Men', A. N.

TITLE: Contribution to the theory of the optical spectrum of Cr^{3+} ions in spinel

SOURCE: Fizika tverdogo tela, v. 6, no. 7, 1964, 1939-1945

TOPIC TAGS: optical spectrum, spinel, chromium, absorption band, level transition

ABSTRACT: Continuing an earlier investigation of the influence of the second-order neighbors on the splitting of the 4F level of the ground state of an ion with d^3 configuration situated in the octahedral site of an ideal spinel structure (FTT, v. 5, 1630, 1963), the authors investigate in greater detail the splitting of the 4F ground-state level of a Cr^{3+} ion situated in the octahedral site of spinel (MgAl_2O_4). More accurate formulas are obtained for the energy

See 1/2

L 20277-65

ACCESSION NR: AP4041690

level by simultaneously considering the influence of fields with cubic and trigonal symmetry. The theoretical results obtained are used for a new interpretation of the origin of two broad optical absorption bands, which are related to quantum transitions due to the strong trigonal field of the second neighbors. Arguments are advanced for and against this interpretation during the course of comparison of the theoretical results with the experimental data. The need for additional research is indicated. Orig. art. has: 1 figure, 9 formulas, and 1 table.

ASSOCIATION: Institut metallurgii AN SSSR, Sverdlovsk (Institute of Metallurgy, AN SSSR)

SUBMITTED: 28Dec63

ENCL: 00

SUB CODE: SS, OP

NO REF SOV: 004

OTHER: 011

Card 2/2

L 23190-66 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD/AT
 ACC NR: AR6016169 SOURCE CODE: UR/0058/65/000/011/D003/D003

AUTHORS: Druzhinin, V. V.; Kurushin, Yu. N.; Men', A. N.; Haysh, V. Ye.; Nikiforov, A. Ye.; Cherepanov, V. I.

TITLE: Contribution to the theory of energy spectra of paramagnetic ions in certain oxides 21

SOURCE: Ref. zh. Fizika, Abs. 11D16 37

REF SOURCE: Tr. Komis. po spektroskopii. AN SSSR, t. 3, vyp. 1, 1964, 514-519 B

TOPIC TAGS: paramagnetic ion, spectrum, ION ENERGY

ABSTRACT: Calculations are presented of the energy spectrum of a paramagnetic ion in a crystal with spinel structure in the approximation of the average intracrystalline field. It is shown that allowance for the field due to the second and farther neighbors can exert an appreciable influence on the interpretation of the spectra of such ions. Quantitative calculation results are presented for Cr^{3+} in $MgAl_2O_4$ and experimental data on this ion. [Translation of abstract]

SUB CODE: 20

Card 1/1 MC

ACCESSION NR: AP4023384

S/0048/64/028/003/0430/0432

AUTHOR: Men', A.N.; Cherepanov, V.I.

TITLE: Energy spectrum of impurity paramagnetic ions in ideal spinel [Report, Symposium on Ferromagnetism and Ferroelectricity held in Leningrad 30 May to 5 June 1963]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.3, 1964, 430-432

TOPIC TAGS: spinel structure, paramagnetic ion, impurity ion, electron paramagnetic resonance

ABSTRACT: The splitting of the ground state of a paramagnetic ion having an incomplete 3d shell, present as an impurity in an ideal spinel structure, is discussed theoretically. Quantitative calculations were performed for Cr^{3+} in MgAl_2O_4 , and the results are compared with optical and electron paramagnetic resonance (EPR) data of other workers. The calculations were performed by treating the average field of the crystal as a perturbation. In order to discuss ions having the $3d^n$ configuration with $n = 1, \dots, 4, 6, \dots, 9$, it was necessary to consider only a single D term and a single F term. Diagrams are given showing the nature of the splitting of these two

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ACCESSION NR: AP4023384

terms in each of the three possible locations in the lattice. The splitting of an F term in the octahedral position was calculated quantitatively for Cr^{3+} in MgAl_2O_4 . The effective nuclear charge for the 3d wave functions was obtained from the experimental ionization potential. Optical absorption by magnetic dipole transition should occur at wave numbers 15,000, 23,400 and 36,500 cm^{-1} . The two strongest of these absorptions coincide in order of magnitude with the absorption peaks observed by S.V. Grum-Grzhimaylo (Zap.Vses.mineral.o-va,Vtoraya seriya,87,vy*p.2,1929 (1958)) at 18,000 and 25,000 cm^{-1} . To compare the calculated level splitting with EPR data, the spin Hamiltonian of H.H.L.Pryce (Proc.Phys.Soc.,A,63,25,1950) was employed. With this it is possible to deduce the spin-orbit coupling constant from combined optical and EPR data. The EPR data of R.Stahle-Brada and W.Low (Phys.Rev.,116,No.3,561, 1959) give a value of 88 cm^{-1} for the coupling constant. This is in good agreement with the value of 91 cm^{-1} for the free ion. The EPR data of V.A.Atsarkin (Zhur.eksp.i teor.fiz.,43,No.3(9),839,1962) yield a coupling constant of 120 cm^{-1} , and are therefore not consistent with the optical data nor with the present calculations. Orig.art.has: 4 formulas and 3 figures.

Card 2/3

ACCESSION NR: AP4023384

ASSOCIATION: Institut metallurgii Ural'skogo filiala Akademii nauk SSSR
(Institute of Metallurgy, Ural Branch, Academy of Sciences, SSSR); Ural'skiy
gosudarstvennyy universitet (Ural State University)

SUBMITTED: 00

DATE ACQ: 10Apr64

ENCL: 00

SUB CODE: PH

NO REF SOV: 002

OTHER: 004

CHEBEPANOV, V.I.; MEN', A.N.

Theory of the optical spectrum of Cr^{3+} ions in spinel. Fiz. tver. tela
6 no.7:1939-1945 J1 '64. (MIRA 17:10)

1. Institut metallurgii AN SSSR, Sverdlovsk.

NIKIFOROV, A.Ye.; MEN', A.N.; CHEREPANOV, V.I.

Theory of the optical spectrum of bound pairs of impurity ions
in a crystal. Fiz. tver. tela 6 no.11:3288-3293 N '64. (MIRA 18:1)

1. Ural'skiy gosudarstvennyy universitet imeni A.M.Gor'kogo,
Sverdlovsk.

L 41177-65 EWT(1)/EWT(m)/EPR/EWP(t)/EWP(n) PS-4 IJP(c) JD/JG
 ACCESSION NR: AP5003451 S/0181/65/007/001/0282/0283
 20
 18
 B

AUTHORS: Cherepanov, V. I.; Men', A. N.

TITLE: On the calculations of the parameters of the spin Hamiltonians of Cr^{3+} in MgAl_2O_4

SOURCE: Fizika tverdogo tela, v. 7, no. 1, 1965, 282-283

TOPIC TAGS: spin Hamiltonian, ²¹energy spectrum, ²⁷chromium, ²⁷magnesium compound, wave function, spinel

ABSTRACT: In an earlier paper (FTT v. 6, 1939, 1964) the authors calculated the energy spectrum of a Cr^{3+} ion placed in an octahedral site 16(d) of spinel, with account of the interaction between terms. Since the correct wave functions depend on the parameters b_i of the crystal field, the parameters of the spin-Hamiltonian are also functions of b_i . Formulas are derived for the spin-Hamiltonian parameters on this basis and are compared with the experimental

Card 1/2

L 41177-65

ACCESSION NR: AP5003451

2
data. The results show that account of the term interaction greatly influences the parameter D (abstractor's note: the symbols used are those of the earlier paper). Orig. art. has: 5 formulas and 1 table.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet (Ural State University); Institut metallurgii AN SSSR, Sverdlovsk (Institute of Metallurgy, AN SSSR)

SUBMITTED: 28Jul64

ENCL: 00

SUB CODE: SS, GP

NR REF SOV: "003

OTHER: 002

me
Card

2/2

L 52518-65 ENT(1)/EPF(c)/EEC(t) P1-4 LJP(c) WW/GG

ACCESSION NR: AP5010728

UR/0181/65/007/004/1162/1168

AUTHOR: Bikiforov, A. Ye.; Cherepanov, V. I.

TITLE: Contribution to the theory of the electron paramagnetic resonance spectrum of pairs of exchange-coupled paramagnetic ions in crystals

SOURCE: Fizika tverdogo tela, v. 7, no. 4, 1965, 1162-1168

TOPIC TAGS: electron paramagnetic resonance, spin Hamiltonian, exchange coupling, paramagnetic ion, exchange interaction, npr spectrum

ABSTRACT: The authors derive the spin Hamiltonian for a pair of exchange-coupled paramagnetic ions in a crystal for the case of strong and weak exchange interaction between the ions of the pairs. The derivation is obtained by a method analogous to that used by Pryce and Abragam (Proc. Phys. Soc. A63, 25, 1950 and Proc. Roy. Soc. A205, 135, 1951) for one ion. The ground state of each ion in the crystal is assumed to be orbitally nondegenerate. The Heitler-London approximation is used for the wave function of the ion pair, resonance interaction between the ion pairs is disregarded, the exchange interaction is assumed to be isotropic, and the ex-

Cord 1/2

L 52518-65

ACCESSION NR: AP5010728

change integral for the pair is assumed to be the same for the ground and excited states of the paired ions. It is shown that in the case of exchange interaction the spin Hamiltonian coincides with that obtained by H. Statz et al. (J. Appl. Phys., Suppl., 32, 218, 1961), and in the case of strong exchange interaction it has the same form but differs in the dependence of the interaction constants on the total spin of the pair. As an example, the case of a pair of Cr^{3+} pions in corundum is considered, and the EPR spectrum of such pairs is calculated. The results agree with those of Statz et al. Orig. art. has: 10 formulas and 2 tables.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet, Sverdlovsk (Ural State University)

SUBMITTED: 17Aug64

ENCL: 00

SUB CODE: SS, MF

NR REF SOV: 001

OTHER: 005

LL
Card 2/2

1 61406-65 EWP(e)/EWT(m)/EWP(1) WH
 ACCESSION NR: AP5017293
 AUTHOR: Razer, B. I.; Cherepanov, V. I.
 TITLE: Concerning the calculation of the intensities of the broad line in the ruby spectrum
 SOURCE: Fizika tverdogo tela, v. 7, no. 7, 1965, 2024-2027
 TOPIC TAGS: ruby, ruby spectrum, absorption spectrum, absorption line, line in-
 ABSTRACT: The article deals with the effect of the vibration of the ligands and of the static field of Cs trigonal symmetry on the intensity of the broad band of optical absorption of the ions Cr^{3+} in corundum, observed near 18,000 and 25,000 cm^{-1} respectively. The mechanism responsible for the transition is assumed to be rotation of the oxygen triangles relative to one another, as a result of a distortion of the inversion symmetry, or else the static rotation of the same triangles (by approximately 4.5°), which takes place in the corundum. It is shown that allowance for the vibrations of the ligands, and also for the true symmetry of the Cs field makes it possible to explain satisfactorily the origin of the parallel component of the intensity of the 18,000 cm^{-1} band and reconcile the experimental and theoretical values. A numerical estimate shows that the contribution made to

UR/0181/65/007/007/2024/2027
 27
 26
 15

Card 1/2

L 3336-66 EWT(1)/T IJP(c) GG

ACCESSION NR: AP5017316

UR/0181/65/007/007/2180/2185

AUTHORS: Men', A. N.; Muftakhova, F. I.; Nikolayev, A. P.; Cherepanov, V. I.

TITLE: On the account of the 'interaction' of the terms in the calculation of the EPR spectra of the iron-group ions

SOURCE: Fizika tverdogo tela, v. 7, no. 7, 1965, 2180-2185

TOPIC TAGS: electron paramagnetic resonance, EPR spectrum, cubic crystal, crystal lattice structure, ion

ABSTRACT: General expressions are obtained for the parameters of the spin Hamiltonian of the iron-group ions in a crystalline field of cubic symmetry with account of the interaction between the terms. The influence of the terms on the spin-Hamiltonian constants is analyzed for ions with configuration d^n ($n = 1-9$) in octahedral and tetrahedral lattice points with cubic island symmetry. It is shown that it is sufficient to confine the calculations to the cases d^2 and

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L 3336-66

ACCESSION NR: AP5017316

d^7 (octahedral lattice point) and d^3 (tetrahedral lattice point).
 Tables are presented for the splitting of the ground levels of the
 ions with configurations d^2 , d^3 , and d^7 under the influence of the
 spin-orbit interaction and of an external magnetic field, and for
 constants of the EPR spectrum for the same ions. It is shown that
 the term interaction can become significant in the calculation of the
 spin-Hamiltonian constants. Orig. art. has: 1 figure, 2 formulas
 and 2 tables.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet im. A. M. Gor'kogo
 Sverdlovsk (Ural State University)

SUBMITTED: 23Nov64

ENCL: 00

SUB CODE: NP, OP

NR REF SOV: 002

OTHER: 006

Card

2/2 DP

L 6331-66 EWT(1)/EWT(m)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/GG

ACCESSION NR: AP5019873

UR/0181/65/007/008/2513/2518

AUTHOR: ^{44, 55} Druzhinin, V. V.; ^{44, 55} Cherepanov, V. I.; ^{44, 55} Levin, V. S.

TITLE: On the calculation of the energy spectrum of ions with configuration $3d^N$ in a classical field of cubic symmetry

SOURCE: Fizika tverdogo tela, v. 7, no. 8, 1965, 2513-2518

TOPIC TAGS: ^{21, 40, 55} cubic crystal, ¹⁶ crystal symmetry, spectral energy distribution, group theory, spin orbit interaction, matrix function, perturbation method, tensor

ABSTRACT: To calculate the energy spectrum, the authors select the wave functions of the zero-order approximation of the problem as the functions that diagonalize part of the perturbation operator for the medium crystalline field, which scheme is known to be equivalent to the scheme of the strong crystalline field. It is more convenient, however, to calculate the medium-field scheme because no Clebsch-Gordan coefficients are necessary for fractional parentage coefficients for the groups of point symmetry. The spin-orbit interaction energy is neglected. The interaction of the terms is taken into account. The matrix elements are calculated with the aid of formulas derived by means of the method of irreducible tensor operators. Orig. art. has: 13 formulas.

Card 1/2

0902 0026

L 6331-66

ACCESSION NR: AP5019873

ASSOCIATION: Ural'skiy gosudarstvennyy universitet im. A. M. Gor'kogo, Sverdlovsk
(Ural State University) 44.55

SUBMITTED: 28Dec64

ENCL: 00

SUB CODE: SS, NP

NR REF SOV: 003

OTHER: 007

nw

Card 2/2

L 9569-66 EWT(1) IJP(c) WW/GG/AT

ACC NR: AP5027437

SOURCE CODE: UR/0181/65/007/011/3431/3432

AUTHOR: ^{44,55} Nikiforov, A. Ye.; ^{44,55} Cherepanov, V. I. 55
B

ORG: ^{44,55} Ural State University, Sverdlovsk (Ural'skiy gosudarstvennyy universitet)

TITLE: Correction to the article "Theory of electron paramagnetic resonance spectrum of exchange-coupled paramagnetic ions in crystals" (FTT, 7, 1162, 1965)

SOURCE: Fizika tverdogo tela, v. 7, no. 11, 1965, 3431-3432

TOPIC TAGS: ^{21,44,55} crystal, ^{21,44,55} corundum, EPR spectrum, paramagnetic ion

ABSTRACT: An inaccuracy was overlooked in the original article in derivation of the spin Hamiltonian of an ion pair with strong exchange interaction. In averaging the energy differences between the ground level of the pair and the excited multiplets, multiplication by the static weights of the components was omitted. Averaging should be done according to the formula

$$\frac{1}{G_{I,S}} = \sum_{S'} \frac{\frac{(2S'+1)}{G_{I,SS'}}}{\sum_{S'} (2S'+1)},$$

where

$$G_{I,SS'} = 1 + \frac{1}{2(\epsilon_0^{(0)} - \epsilon_0^{(0)})} \left\{ \frac{J'}{2} [S'(S'+1) - S_A(S_A+1) - S_B(S_B+1)] - \right. \\ \left. - \frac{J}{2} [S(S+1) - S_A(S_A+1) - S_B(S_B+1)] \right\}.$$

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L 9569-66

ACC NR: AP5027437

After averaging according to this formula with regard to the theorem on invariance of the "center of gravity" of the multiplet, the formula

$$\frac{1}{G_{I,S}} = 1 + \frac{J}{2(t_1^{(0)} - t_0^{(0)})} [S(S+1) - S_A(S_A+1) - S_B(S_B+1)].$$

is obtained. Thus the assumption $J' = J$ in the original paper is unnecessary since J' does not appear in the final result. The expressions for the spin Hamiltonian constants $D^{(S)}$, $g_1^{(S)}$ and $g_2^{(S)}$

for the case of axial symmetry have the form

$$\frac{D^{(S)}}{D} = \frac{1}{G_S}, \quad \frac{2 - g_2^{(S)}}{2 - g_1^{(S)}} = \frac{1}{G_S} \quad (\sigma = \parallel \text{ или } \perp),$$

where

$$\frac{1}{G_S} = 1 + \frac{J}{2\Delta_0} [S(S+1) - S_A(S_A+1) - S_B(S_B+1)],$$

and Δ_0 is the energy interval between the ground level and the first excited level

where the dipole optical transition is allowed for σ polarization. The following expressions are obtained for the case of the closest chromium ion pair in corundum

($S_A = S_B = \frac{3}{2}$, $J = 390 \text{ cm}^{-1}$, $\Delta_1 = 18450 \text{ cm}^{-1}$, $\Delta_2 = 18000 \text{ cm}^{-1}$)

$$\frac{D^{(1)}}{D} = 0.940, \quad \frac{D^{(2)}}{D} = 0.984, \quad \frac{D^{(3)}}{D} = 1.05, \quad \frac{2 - g_2^{(1)}}{2 - g_1^{(1)}} = 0.940, \quad \frac{2 - g_2^{(1)}}{2 - g_1^{(1)}} = 0.942, \quad \frac{2 - g_2^{(2)}}{2 - g_1^{(2)}} = 0.984, \\ \frac{2 - g_2^{(3)}}{2 - g_1^{(3)}} = 0.985, \quad \frac{2 - g_2^{(3)}}{2 - g_1^{(3)}} = 1.05, \quad \frac{2 - g_2^{(3)}}{2 - g_1^{(3)}} = 1.04.$$

Card 2/2

SUB CODE: 20,07/

SUBM DATE: 04Jun65/

ORIG REF: 000/

OTH REF: 000

L 23662-66 T/EWP(t) IJP(c) JD

ACC NR: AP6012800

SOURCE CODE: GE/0030/66/014/002/0391/0402

AUTHOR: Nikiforov, A. E.; Cherepanov, V. I.

53

ORG: Ural State University, Sverdlovsk

B

TITLE: Theory of the optical spectrum of ion pairs of $3d^3$ iron-group impurities in crystals

21

SOURCE: Physica status solidi, v. 14, no. 2, 1966, 391-402

TOPIC TAGS: optic spectrum, crystal impurity, impurity ion, dipole interaction, ruby

ABSTRACT: A calculation is made of the energy spectrum of impurity ion pairs with $3d^3$ configuration in crystals. The optical spectrum of these crystals is interpreted by assuming that a large part of the low-symmetry crystalline field acts on the impurity ion, the electric-dipole interaction is taken into account. The case of ruby ($Cr^3:Al_2O_3$) is treated in detail as an example. The results are compared with experimental data. The authors are grateful to V. B. Fedorov for his courtesy in supplying details on the structure of corundum. Orig. art. has: 2 figures, 1 table, and 17 formulas. [Author's abstract] [KS]

SUB CODE: 20/ SUBM DATE: 19Jan66/ ORIG REF: 005/ SOV REF: 001/

2

Card 1/14/ OTH REF: 010/

L 26125-66 EWT(1)/EWP(e)/EWT(m) IJP(c) JD/JW/JG/CG/JH

ACC NR: AP6015803

SOURCE CODE: UR/0386/66/003/010/0401/0404

AUTHOR: Sherstkov, Yu. A.; Nepsha, V. I.; Nikiforov, A. Ye.; Cherepanov, V. I.

ORG: Ural State University (Ural'skiy gosudarstvennyy universitet)

TITLE: Influence of an external electric field on the EPR signals of pairs of exchange-coupled chromium ions in ruby

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 10, 1966, 401-404

TOPIC TAGS: electron paramagnetic resonance, line splitting, corundum, chromium, resonance absorption, exchange reaction

ABSTRACT: The use of an effect predicted theoretically by one of the authors (Nikiforov, Fiz. tverdogo tela v. 7, 1248, 1965), consisting in nonlinear splitting of EPR signals of pairs of exchange-coupled Cr^{3+} ions in corundum, is proposed for a unique interpretation of the many weaker supplementary EPR signals in corundum due to pairs of exchange-coupled chromium ions. The effect was used to investigate experimentally the spectral regions from 480 to 680 G and from 850 to 1200 G in a corundum crystal containing 0.05% chromium by weight. The RE 1301 apparatus was used for the measurement. For $H \parallel E \parallel C_3$ (H and E are the electric and magnetic field intensities and C_3 the corundum optical axis) the influence of the electric field was observed in five signals at 525, 590, 926, 994, and 1093 G. From plots of the derivative of the absorption signal and of the theoretical dependence of the splittings of the EPR signals

Card 1/2

L 26125-66

ACC NR: AP6015803

on E for the transitions for which nonzero line splitting is possible, as well as from other experimental data, it is deduced that the signals are due to pairs and not to iron and manganese impurities. It is deduced that a combination of the method of measuring signal splitting in an electric field (which determines the type of transition) and methods involving temperature and angle measurements will make it possible to relate the observed signals to concrete pairs, and that investigations of the observed effect in magnetically dilute crystals, over a wide range of magnetic fields, will yield more complete information on the exchange interaction of paramagnetic ions. Orig. art. has: 2 figures and 1 formula.

SUB CODE: 20/ SUBM DATE: 18Mar66/ ORIG REF: 005/ OTH REF: 003

Card 2/2

L 05770-67 EW1000

ACC NR: AR6031878

SOURCE CODE: UR/0058/66/000/006/E068/E068

43
B

AUTHOR: Druzhinin, V. V.; Cherepanov, V. I.

TITLE: Effect of an electric field on the dipole forbidden exciton phototransitions in a cubic crystal

SOURCE: Ref. zh. Fizika, Abs. 6E519

REF SOURCE: Uch. zap. Ural'skogo un-ta. Ser. fiz., vyp. 1, 1965, 155-162

TOPIC TAGS: electric field, cubic crystal, exciton, wave function, phototransition, crystal phototransition

ABSTRACT: Direct exciton phototransitions in crystals with the symmetry group O_h have been investigated. The effect of an electric field, considered as a disturbance, on the carrier wave function is taken into account. It is shown that it leads to Stark splitting and "deflagration" of electro-dipole, electroquadrupole, and magnetodipole lines. For the calculation, the formalism of the Clebsen-Gordan coefficients was used. Both the splitting and the intensity of "deflagration" lines depend quadratically on the electric field; more intensive lines are those which are located near to the allowed lines. G. Shuster. [Translation of abstract]

SUB CODE: 20/

Card 1/1 *Lab*

D'YAKOV, D.F.; IMASHEV, N.U.; KRUCHININ, K.V.; KOGAN, A.B.;
KOZMODEM'YANSKIY, V.V.; TOKAREV, V.P.; TRIFONOV, N.K.
CHEREPANOV, V.N.; VYALOVA, R.I.

Southern Mangyshlak is a large new oil-bearing region. Geol.
nefti i gaza 5 no.12:4-11 D '61. (MIRA 14:11)

1. Vsesoyuznyy nefteyanoy nauchno-issledovatel'skiy
geologorazvedocheskoye upravleniye i trest Mangyshlakneftegazrazvedka.
(Mangyshlak Peninsula—Oil fields)

CHEREpanov, V.N.

Production of sulfite acid from caustic magnesite. Bum.prom.
37 no.1:7-8 Ja '62. (MIRA 15:1)

1. Nachal'nik tsellyuloznogo zavoda Visherskogo kombinata.
(Woodpulp)
(Magnesite)

LYAMZIN, I.T.; CHEREpanov, V.N.; MATVEYEVA, S.P.; YEGOROVA, A.S.; BUYLENKO, V.I.

Destruction of alkali in the presence of sodium chlorate contained in the
caustic soda solution. Khim. volok. no.3:57 '65. (MIRA 18:7)

1. Ryazanskiy kombinat iskusstvennogo volokna.

BOBROV, A.I.; TURBANOVA, A.D.; POPOV, B.Ye.; CHEREPANOV, V.N.; KHORSHEV, V.K.

Acid sulfite pulping by the use of a magnesium base. Bum. prom. no.
2:5-8 F '64. (MIRA 17:3)

1. Moskovskiy filial Vsesoyuznogo nauchno-issledvoatel'skogo instituta tsellyulozno-bumazhnoy promyshlennosti (for Bobrov, Turbanova).
2. Visherskiy kombinat (for Popov, Cherepanov, Khorshev).

PRODANENKO, V.M.; CHEREPANOV, V.N.

Finishing furniture by thermoplastics. Bum. 1 der. prom.
no.2:48-51 Ap-Je '65. (MIRA 18:6)

I 8619 66 EPC(-) W
JCC NK AP5027031

SOURCE CODE: UR/0120/65/000/005/0188/0190

AUTHOR: Vonnyuk, A. S.; Doroshenko, A. N.; Cherspanov, V. N. 29ORG: Physics-Engineering Institute GKAE, Sukhumi (Fiziko-tekhnicheskiy institut GKAE) BTITLE: An ionization manometer for the measurement of steady and pulsed pressuresSOURCE: Pribory i tekhnika eksperimenta, no. 5, 1965, 188-190TOPIC TAGS: manometer, gas pressure, pressure measuring instrument qm

ABSTRACT: An ionization manometer for the measurement of fast changes in pressure of neutral gases in vacuum chambers using quasi-stationary magnetic and HF fields has been developed using 2S3A ultraminiature triodes as sensors. The anode-cathode voltage difference is 150 v, anode-collector voltage is 10 v, and emission current is 100—500 μ a. The anode voltage originates from a 26-I generator supplying at 5 kc voltage pulses 10 μ sec long. The presence of external fields makes additional calibration necessary. The manometer has a range from 10^{-4} to 1 Torr. Using a low pressure wave generated by a pulsed electromagnetic valve, the time constant of the new device is found to be less than 100 μ sec demonstrating the manometer capable of measuring time variations in pressure. Orig. art. has: 4 figures.

SUB CODE: IE,EC / SUBM DATE: 07Aug64 / ORIG REF: 003 / OTH REF: 002

Card 1/1 jrm

UDC: 531.788.133.7

KUZYUKOV, Fedor Fedorovich, Geroy Sotsialisticheskogo Truda;
CHEREpanov, Vasilii Nikolayevich, dots., kand. ekon.
nauk; MORDOVSKIkh, V.P., red.

[The role of industry in the Urals in creating the
material and technical basis of communism] Rol' industrii
Urala v sozdanii material'no-tekhnicheskoi bazy kommunizma.
Cheliabinsk, Iuzhno-Ural'skoe knizhnoe izd-vo, 1964. 217 p.
(MIRA 18:6)

1. Chelyabinskiy promyshlennyy oblastnoy komitet KPSS (for
Kuz'yukov). 2. Chelyabinskiy institut mekhanizatsii i elektri-
fikatsii sel'skogo khozyaystva (for Cherepanov).

S/0120/64/000/003/0192/0195

ACCESSION NR: AP4041051

AUTHOR: Skripov, V. P.; Cherepanov, V. N.

TITLE: Instrument for determining the range of sensitivity of an overheated liquid to radiation

SOURCE: Priory* i tekhnika eksperimenta, no. 3, 1964, 192-195

TOPIC TAGS: bubble chamber, bubble chamber radiation sensitivity

ABSTRACT: An instrument (see Enclosure 1) provides for floating up tiny droplets of the test liquid in another liquid. In small flask 12, a small amount of the test liquid is emulsified in sulfuric acid by means of a magnetic stirrer 1. Via capillary 2, droplets of 0.1-0.4-mm enter a glass tube 11 filled with sulfuric acid and float up. A copper shell 4 has heater 8 at the top which provides for a uniform temperature rise along the acid column. Glass jacket 6 stabilizes the heat loss conditions. Isotopes Co^{60} , Zn^{65} , Na^{22} , and the gamma-bremsstrahlung from a 6-Mev betatron were used as radiation sources. Without irradiation, all droplets burst within 2 mm (temperature interval $\pm 0.5^\circ\text{C}$). With irradiation, part

ACCESSION NR: AP4041051

of the droplets burst at a lower temperature. These substances were tested: n-pentane, n-heptane, perfluoroheptane, perfluoropropylpyridine. Sensitivity temperature limits for these substances are reported. "The authors wish to thank Ye. N. Sinitsyn for his help in carrying out a few of the experiments. They are also grateful to N. B. Delone, V. K. Lyapidevskiy, and G. S. Voronov for discussing some points, and to S. V. Sokolov for lending the fluorinated liquids." Orig. art. has: 3 figures and 1 table.

ASSOCIATION: Ural'skiy politekhnicheskiy institut im. S. M. Kirova
(Ural Polytechnic Institute)

SUBMITTED: 02Jul63

ENCL: 01

SUB CODE: NP

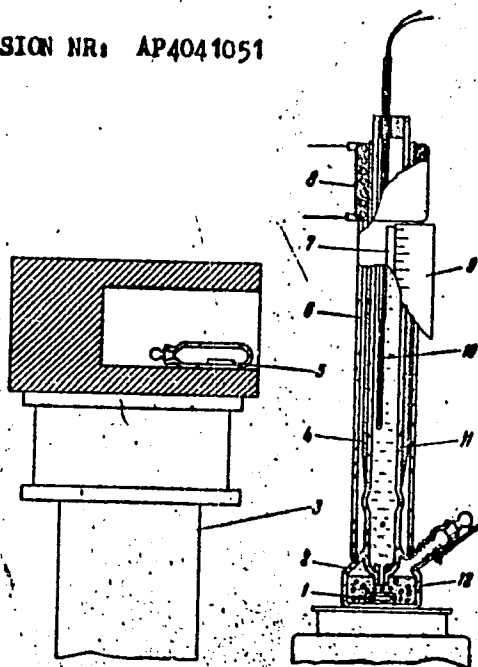
NO REF SOV: 002

OTHER: 002

Card 2/3

ACCESSION NR: AP4041051

ENCLOSURE: 01



Instrument for determining
temperature sensitivity of
liquids to radiation

Card

3/3

VOZNYUK, A.S.; DOROSHENKO, A.N.; CHEREPANOV, V.N.

Ionization manometer for measuring steady-state and pulsewise pressure. Prib. i tekhn. eksp. 10 no. 5: 188-190 S-O '65.
(MIRA 19:1)

1. Fiziko-tekhnicheskiy institut Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR, Sukhumi. Submitted August 7, 1964.

L 44254-66 FWT(1) RO

ACC NR: AR6022388 (N) SOURCE CODE: UR/0397/65/000/024/0071/0072

AUTHOR: Kolesov, O. Ye.; Cherepanov, V. N. 29

TITLE: Antidote⁶ action of cobalt mercaptides in cyanide poisoning B

SOURCE: Ref. zh. Farmakologiya. Toksikologiya, Abs. 24.54.568

REF SOURCE: Sb. Farmakol. i toksikologiya. Vyp. 1. Kiyev, Zdorov'ya, 1964, 167-173

TOPIC TAGS: cyanide, poison effect, chemotherapy, cobalt, mercaptan,

~~toxicology~~
ABSTRACT: Cobalt mercaptides were investigated: 2,3-cobalt-dimercaptopropane sulfonate Na (Co-unithiol; I), 1,3-cobalt-dimercaptoisopropane sulfonate Na (Co-isounithiol II), 2,3-cobalt-dimercaptopropyl mercaptoethane sulfonate Na (III), 2,3-cobalt-dimercaptopropyl mercaptoethane sulfonate Na (IV), cobalt mercaptoethane sulfonate Na (V) and also Co₂ EDTA. Experiments were conducted on rats. NaCN was administered subcutaneously (1% solution). The preparations under study were administered subcutaneously and intraperitoneally in the form of 10% aqueous solutions. Co₂ EDTA was most toxic. Eight of the 15 animals poisoned with a LD₁₀₀ of NaCN (10 mg/kg) and treated with I (120 mg/kg dose) survived with intraperitoneal administration of the preparation and 3 of the 15 animals survived with subcutaneous

Card 1/2

UDC: 615.92

11. 1125h-66

ACC NR: AR6022388

administration. Fourteen of 15 animals survived with intraperitoneal administration of III (100 mg/kg). Prophylactic administration of III intraperitoneally or subcutaneously prevented death of animals. However, with increase of NaCN dose to 2 LD₁₀₀ almost all animals died. III, IV and V proved ineffective. Seven of the 15 rats given a LD₁₀₀ of NaCN and treated with Co₂ EDTA (30 mg/kg dose) survived with intraperitoneal administration of the preparation and 5 of 15 animals survived with subcutaneous injection of the preparation. In the case of prophylactic administration of Co₂ EDTA, 8 of 10 animals survived with intraperitoneal administration and 7 of 10 animals survived with subcutaneous administration. Thus, antidote properties are displayed by complexes of bivalent cobalt with a B trilon in which the cobalt is bonded to the carboxyl groups and nitrogen atoms at the expense of coordinated bonds and also by mercaptides in which the metal is combined with sulfur atoms at the expense of ordinary covalent bonds. N. Popov. [Translation of abstract].

SUB CODE: 06, 07

Card 2/2 MT

CHERE PANOV, V.S.

BOGOMOLOV, G.F.; CHERE PANOV, V.S.

Semiautomatic equipment for roasting brake shoes; suggested by
G.F. Bogomolov and V.S. Cherepanov. Prom. energ. 12 no.12:16
D '57. (MIRA 10:12)

(Electric furnaces)

S/119/62/000/002/007/010
D201/D301

AUTHORS: Vayner, M.S. and Cherepanov, V.S.

TITLE: New pneumatic instruments

PERIODICAL: Priborostroyeniye, no. 2, 1962, 27-29

TEXT: The authors discuss the new pneumatic temperature gauges of accuracy class 1 and 1.5 developed by the Tsentral'noye proyektno-konstruk-torskoye byuro teploenergeticheskikh priborov i sredstv avtomatizatsii (Central Design Office of Heat Energy Instruments and Automation Equip-ment). Their range of operation is -100 to $+600$ C, output signal vary-ing between 0.2 and 1.0 kg/cm² and they may be used in places with danger of explosion. They are mass produced by the Tatarskiy sovnarkhoz and are classified as follows: Indicating, non-scale and recording; liquid, gas or Hg filled. As recommended by the Niftteplopribor, the pickups of the instruments use a spiral manometric spring, with pinched profile and minimum internal volume of 0.6 cm³; this secures a display angle of $60-70^\circ$ with a maximum traction moment of $6-7$ kgmm/degree. As an example a pressure

Card 1/2

New pneumatic instruments

S/119/62/000/002/007/010
D201/D301

gauge is described. It consists of a pneumatic relay, a feedback spring, the nozzle - flap arrangement and the control manometers. The flap receives an angular displacement from the elastic element of the thermosystem through the transmitting mechanism. The change of the gap between the nozzle and the flap results in a change of pressure in the circuit of the nozzle fixed at the feedback spring, and in the chamber of the pneumatic relay nozzle. The relay converts the signal into pressure which is transmitted to the secondary instrument and onto the internal cavity of the feedback spring. The spring maintains a distance between nozzle and flap at which the pressure of the air in the system is proportional to the measured temperature. A pneumatic regulator 04M is described briefly. The regulator contains a segmented element for transmitting pulses of the measurement system to the recording pen and to the control system of the instrument; a primary relay which receives the pulses from the measuring system (segment) and transforming them into the pulses of compressed air; the improved pneumatic relay for amplifying the power of pulses applied to the output stage; the chart drive mechanism. The regulator can be adjusted for non-automatic operation. There are 4 figures.

Card 2/2

14050-65 EPF(c)/EPF(n)-2/EPR/EPA(s)-2/EPA(w)-2/EWP(k)/EWT(d)/EWT(m)/EWP(h)/T/
EWP(l)/EWP(b)/EWA(d)/EWP(l)/EWP(e)/EWP(v) PI-l/Pq-l/Pr-l/PS-l/Pt-10/Pu-l/Pab-10
WH/WW/JG

ACCESSION NR: AP5012325

UR/0286/64/000/022/0067/0067

AUTHOR: Blyumshteyn, Z. G.; Cherepanov, V. S.; Miftakhov, E. Z.; Spasekiy, A. G.;
Fomin, B. A.; Koroleva, N. P.

TITLE: Temperature sensing system for manometric thermometers. Class 42, No. 76
166520 75
β

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 22, 1964, 67

TOPIC TAGS: 0 thermometer 14

Translation: A patent has been issued for a temperature system used in
manometric thermometers. The unit contains a temperature bulb and a
capillary tube. In order to expand the upper measurement limit, the
filler which is used is an alloy containing 66.8-67.2% gallium, 20.3-
20.7% indium and 12-13% tin and the bulb is made of a material which is
stable with respect to the filler at high temperatures, e. g. alundum
or another ceramic or cermet material based on quartz. 15

16

Card 1/2

L 40760-65

ACCESSION NR: AP5012325

ASSOCIATION: Tsentral'noye proyektno-konstruktor'skoye byuro teploenergeticheskogo priborostroyeniya (Central Planning and Design Office of Heat and Power Engineering Equipment)

SUBMITTED: 00

ENCL: 00

SUB CODE: TD

NO REF SOV: 000

OTHER: 000

JPRS

Cord 2/2 *pub*

CHEREPANOV, V. V.

Lever compensation gear. Obm. tekhn. opyt. [MLP] no. 11:25-27
'56. (MIRA 11:11)
(Textile finishing--Equipment and supplies)

CHEREpanov, V.V., gornyy inzh.; STEPANENKO, O.G., gornyy inzh.

Performance of a cutter-loader brigade in Karaganda mine No.37.
Ugol' 33 no.11:35-36 N '58. (MIRA 11:11)
(Karaganda Basin--Coal mining machinery)

CHEREpanov, V.V.; KARABAYEV, Yu.V.

Pulsed-multiplexing equipment for radio communication lines.
Avtom. telem. i svyaz' 3 no.5:18-21 My '59.

(MIRA 12:8)

1. Nachal'nik otдела svyazi Ufimskoy dorogi (for Cherepanov).
2. Nachal'nik laboratorii signalizatsii i svyazi Ufimskoy dorogi (for Karabayev).

(Railroads--Electronic equipment)

CHEREpanov, V.V.

Parasites of Amur fishes acclimatized in the basin of Lake
Baikal. Zool.zhur. 41 no.10:1568-1571 0 '62. (MIRA 15:12)

1. Biologico-Geographical Research Institute of the State
University of Irkutsk.
(Baikal Lake region--Parasites--Fishes)

CHEREPANOV, Veniamin Yakovlovich; KOLOSOV, V.L., red.

[Repair of the steel bodies of vessels and machines used
in lumber floating] Remont stal'nykh korpusov lesosplav-
nykh sudov i mashin. Moskva, Lesnaia promyshlennost',
1965. 151 p. (MIRA 18:6)

NEFEDOV, P.Ya.; CHERNOBROVKIN, V.P.; KATARIN, V.P.; ANAN'IN, A.A.;
BALBASHEV, V.K.; RYVKIN, I.Yu.; TSYNOVNIKOV, A.S.; KUZ'MIN, I.V.;
YAKOVLEV, S.Ye.; SHULAYEV, V.I.; MATSEVICH, S.I.; NARNITSKIY, A.P.;
BOKOV, O.K.; CHEREpanov, V.Ye.

Coke briquets for cupola furnaces. Lit. proizv. no.3:6--7
Mr '65. (MIRA 18:6)

VASHCHENKO, I.I.; KUDRYAVTSEV, M.N.; ~~CHEREPANOV, Ye.D.~~; KLIMINA,
P.F., red.; OS'KINA, V.A., ~~tekhn.~~ red.

[Designing highway lay-out] Proektirovanie trassy avtomobil'nykh dorog. Omsk, Omskoe knizhnoe izd-vo, 1961. 103 p.
(MIRA 16:9)

(Road--Design)

ZHUKOV, A.V.; FLYAGIN, V.G.; CHEREPANOV, Ye.I.

Introducing rammed siliceous lining for steel-teeming ladles.
Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch.i tekh.inform.
18 no.11:3-4 N '65. (MIRA 18:12)

ACC NR: AP7001195 (N) SOURCE CODE: UR/0407/65/000/05-/0051/0057

AUTHOR: Cherepanov, Yu. P. (Voronezh)

ORG: none

TITLE: Effect of the electrolyte flow in the interelectrode gap upon the finish and accuracy of electrochemical hole machining

SOURCE: Elektronnaya obrabotka materialov, no. 5-6, 1965, 51-57

TOPIC TAGS: electrochemical machining, metal machining, *electrochemistry*

ABSTRACT: The results are reported of an experimental investigation of electrochemical hole making in BrKh0,8 bronze under these conditions: cathode-feed rate, 1-5.5 mm/min; source voltage, 15 v; electrolyte, aqueous solution of Na_2SO_4 with a specific weight of 1.11; electrolyte temperature, 20-25C; electrolyte flow rate, 8-13 m/sec; hole diameter, 1.5-5 mm. Tubular

Card 1/2

ACC NR: AP7001195

stainless-steel insulation-coated electrodes were used. The electrolyte turbulence at the outflow cross-section was responsible for a "bottle" shape of the hole with its undesirable "neck." This trouble was eliminated by placing an insulating collar around the electrode; the collar covered the hole, created a small pressure in it, and ensured more uniform flow throughout the entire depth of the hole. A thinner electrode wall and thinner coating contributed to the high quality of the hole. Gap-area ratios, optimal cross-section, etc., are tabulated. Orig. art. has: 5 figures, 18 formulas, and 1 table.

SUB CODE: 13, 09 / SUBM DATE: none

Card 2/2

ZISERSON, E.I., kand.med.nauk; CHEREPAKOVA, A.G.

Case of invagination of a part of the small intestine, cecum and ascending colon into the transverse colon in cancer of the cecum. Zdrav. Kazakh. 22 no.5:72-74 '62. (MIRA 15:6)

1. Iz kafedry gosspital'noy terapii (zav. - prof. Ye.I. TSukershteyn) Karagandinskogo meditsinskogo instituta.

(CECUM--CANCER)

(INTESTINES--INTUSSUSCEPTION)

CHEREPAANOVA, A.G.; REMKHE, G.Ya.

Case of neurogenic tumor of the mediastinum in an infant. Zdrav.
Kazakh. 22 no.3:61-63 '62. (MIRA 15:12)

1. Iz kafedry detskikh bolezney (zav. - dotsent L.G.Leyvikov)
Karagandinskogo meditsinskogo instituta.
(MEDIASTINUM—TUMORS)

KARLINSKIY, V.M., kand.med.nauk; CHEREPAKOVA, A.G.; CHURAKOVA, V.A.

Unusual complications of anthracosis. Terap. arkh. 34 no.12:105
-109 D'62. (MIRA 16:6)

1. Iz gosspital'noy terapevticheskoy kliniki (zav. - dotsent
K.Z.Thimova) Karagandinskogo meditsinskogo instituta i pa-
tologoanatomicheskogo otdeleniya (zav. V.A.Churakova) Gorod-
skoy klinicheskoy bol'nitsy No.1 (glavnyy vrach I.I.Liberman).
(LUNGS—DUST DISEASES)

SHKULOV, V.L., assistant; TNIMOVA, K.Z., ~~dot~~sent; CHEREPANOVA, A.G.,
assistant

Some indices of physiological and pathological senility revealed
in examinations of the cardiovascular system. Trudy LIETIN no.16:
208-217 '64. (MIRA 19:1)

1. Karagandinskiy meditsinskiy institut.

83134

S/020/60/133/005/011/019
B016/B060

5.4210

AUTHORS: Illarionov, V. V., Cherepanova, A. S.
TITLE: The Pressure of Saturated Vapor of Liquid Antimony and
Its State of Association
PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 5,
pp. 1086-1089

TEXT: The linear dependence of $\log P$ on $1/T$ is based on the assumption made by some authors that the antimony vapor consists of Sb_4 molecules and possesses a constant molecular composition in the whole range investigated. In the authors' opinion this cannot serve as a decisive criterion of lacking dissociation in saturated vapor. At high temperatures the antimony vapor is dissociated to a large extent (Ref. 11). The authors suggested a radiometric method of determining the vapor density that is applicable in the presence of γ -radioactive isotopes. This method resembles that of F. S. Dainton and H. M. Kimberley (Ref. 14). By means of it, the authors determined the density of antimony vapor.

Card 1/3

83134

S/020/60/133/005/011/019
B016/B060

The Pressure of Saturated Vapor of Liquid Antimony and Its State of Association

The apparatus used for the purpose is described; it resembles the large oven used for a previous investigation (Refs. 10, 15). Two such ovens were assembled in lead chambers of 2 cm wall thickness. Radioactive antimony was diluted by means of a twentyfold amount of spectrally pure antimony. The authors carried out a total of four experimental series. The temperature of the first oven was 900 and 950°C. The radiometric measurements were made both with rise and drop of temperature. Fig. 1 shows the results obtained. The results were expressed by equations of a linear dependence of $\log m$ on the reciprocal temperatures. The authors attained an absolute agreement in their conversion of the experimental results at 900 and 950°C. This is only possible with equal γ values at these temperatures. Equal γ values at two different temperatures, however, can be attained only in the case of lacking dissociation. This is clearly indicative of the fact that the unsaturated, and consequently also the saturated, antimony vapor practically consists of only Sb_4 molecules at temperatures up to 1000°C. The obtained dependences of $\log m$ on $1/T$ were converted in dependence of $\log P$ on the reciprocal temperatures, and a mean value was obtained from three experimental

The Pressure of Saturated Vapor of Liquid
Antimony and Its State of Association

83134

S/020/60/133/005/011/019
B016/B060

series. On the basis of the equation derived therefrom by the authors, various physical data of antimony were obtained and compared with those supplied by other researchers. The authors mention papers by An. N. Nesmeyanov and B. Z. Iofa (Ref. 2). They thank Academician S. I. Vol'fkovich for having put his laboratory at their disposal. There are 1 figure and 17 references: 4 Soviet, 2 US, 9 German, 1 British. and 1 Japanese.

ASSOCIATION: Nauchnyy institut po udobreniyam i insektofungitsidam im. Ya. V. Samoylova (Scientific Institute of Fertilizers and Insectofungicides imeni Ya. V. Samoylov)

PRESENTED: March 30, 1960, by S. I. Vol'fkovich, Academician

SUBMITTED: March 29, 1960

Card 3/3

ILLARIONOV, V.V.; ILLARIONOV, S.V.; CHEREPANOVA, A.S.

Temperature dependence of the saturated vapor pressure in the
case of a concurrent dissociation. Zhur.fiz.khim. 36 no.8:1787-
1791 Ag '62. (MIRA 15:8)

1. Nauchno-issledovatel'skiy institut po udobreniyam i
insektofungitsidam imeni Samoylova.
(Vapor pressure) (Heat of dissociation)

VOL'FKOVICH, S.I.; LYKOV, M.V.; CHEREPANOVA, A.S.; KOZLOVA, Z.A.;
POLIYEVKTOVA, E.G.

Production of potassium metaphosphate as a concentrated
and complex fertilizer. Zhur.prkl.khim. 38 no.9:1897-
1903 S '65. (MIRA 18:11)

1. Nauchnyy institut po udobreniyam i insektofungitsidam
imeni Ya.V.Samoylova.

CHEREPA NOV, A. [Ya.] 110

Potassium content in plants as a diagnostic feature of their potassium nutrition. A. Cherepanov, *Chemical Scientific Agr.* (U. S. S. R. 1978, No. 11, 101-103 (1978)). An increased K content in plant tissues was associated with less effectiveness of K elements in the nutrient medium, but lower K content did not always show the effectiveness of K in the nutrient medium. The ratio between N and K was a more reliable diagnosis as to the effectiveness of increased content of K in nutrient soils. S. Solov'chuk

AS 5-31.4 METALLOGICAL LITERATURE CLASSIFICATION

CHEREPAANOVA, A. Ya.

"Directed Hereditary Mutability of Features and Characteristics of Hybrid Tomatoes Obtained by Preliminary Grafting." Cand Agr Sci, All-Union Inst of Plant Growing, VASKhNIL, Leningrad, 1954. (RZhBiol, No 4, Feb 55)

SO: Sum. No 631, 26 Aug 55-Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (14)

S/129/63/000/004/002/014
A004/A127

AUTHORS: Bernshteyn, M.L., Charapanova, G.I., Ryzhak, S.S.

TITLE: High-temperature thermomechanical treatment of type X8 (Kh8) alloys

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, no. 4, 1963, 5 - 8

TEXT: The authors carried out tests with the OX 8 (OKh8), 27 X8 (27Kh8) and 47 X8 (47Kh8) alloys to study the effect of high-temperature thermomechanical treatment on these alloys. It was found that high-temperature thermomechanical treatment of these alloys results in a stable strengthening which is maintained even after a phase recrystallization with rapid heating, i.e., the investigated alloys showed a reversibility effect of thermomechanical treatment. The amount of latent energy accumulated in the high-temperature thermomechanical treatment process exceeds that absorbed in cold deformation by a factor of 1.5 - 2. Recrystallization in the initial stages does not fully remove the strengthening effect of high-temperature thermomechanical treatment, which increases the softening

Card 1/2

High-temperature thermomechanical ...

S/129/63/000/004/002/014
A004/A127

temperature. There are 7 figures and 2 tables.

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute of
Steels and Alloys)

Card 2/2

I 40900-65 EWT(m)/EWP(w)/EWA(d)/T/EWP(k)/EWP(z)/EWP(b)/EWA(c) Pf-4

ACCESSION NR: AP5069283

HJW/JD/HW

S/0369/65/001/001/0060/0066

32
31
B

AUTHOR: Bernshteyn, M. L.; Cherepanova, G.I.

TITLE: The possibility of increasing the strength and thermal stability of type Kh8 steels by thermomechanical treatment

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 1, no. 1, 1965, 60-66

TOPIC TAGS: steel strength, steel heat resistance, chromium steel, steel hardening, thermomechanical treatment, steel ductility/type Kh8 steel

ABSTRACT: The steels 03Kh8, 27Kh8, 47Kh8, and 47Kh8V4 (containing 7.64, 7.74, 7.93, and 8.00 wt. % Cr, respectively), used in chemical machinery, were subjected to high-temperature thermomechanical treatment (HTMT) in order to improve their properties. The HTMT was found to produce an appreciable increase in strength and ductility. This increase is greater than that which would be due to the sum of the contributions of deformation and martensitic hardening. The hardening caused by HTMT is very stable to tempering up to 400-500C. The greatest stability toward tempering was shown by alloys which had been subjected to HTMT. The "reversibility" effect was clearly manifested by the steels under consideration; the mechanical properties of steels 27Kh8 and 47Kh8, characteristics

Card 1/2

L 40900-65

ACCESSION NR: AP5009283

of forward HTMT, were almost completely restored after a second quenching with fast heating and low-temperature tempering. The increase in ductility as compared to the forward thermomechanical treatment seems particularly important. Orig. art. has: 5 figures and 2 tables.

ASSOCIATION: Institut stal i splavov, Moscow (Institute of Steel and Alloys)

SUBMITTED 28Sep64

ENCL: 00

SUB CODE: MM

NO REF SOV: 003

OTHER: 000

llc
Card 2/2

CHEREPAKOVA, G. and SMIRNOVA, V.

"Factory Health Resort," v Prom. profektiva, 13, No.13, 1952

CHEREPAKOVA, G. N.

RYZHKOVA, M.N.; CHEREPAKOVA, G.N.; BLEKH, R.L.

Early diagnosis of chronic manganese intoxication. Trudy AMN SSSR
31:34-43 '54. (MLRA 7:10)
(Manganese--Toxicology)

CHEREPAKOVA, G.N.

DROGICHINA, E.A.; GEL'FON, I.A.; CHEREPAKOVA, G.N.

Therapeutic role of Vitamin B₁ in toxic polyneuritis. Trudy AMN SSSR
31:113-127 '54. (MLA 7:10)
(Thiamine) (Neuritis, Multiple)

CHEREPAKOVA, G.N.

KEVORK'YAN, A.A.; PATUSHINSKIY, G.I.; CHEREPAKOVA, G.N.

Liver diathermy as a method of treating mercurialism. Trudy AMN
SSSR 31:136-140 '54. (MLRA 7:10)
(Diathermy) (Mercury--Toxicology)

CHEREpanova, G.N.

Morphological changes in the central nervous system due to carbon
monoxide intoxications. Trudy AMN SSSR 31:162-168 '54. (MLRA 7:10)
(Carbon monoxide--Toxicology) (Nervous system--Diseases)

CHEREpanova, I. V.

5594 Cherepanova, I. V. obmurovka sparenykh vyatskikh kotlov pri obshchey
topke. m., koiz, 1954. 20 s. so skhem. 22 sm. (tsentr. sovet promysl.
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